

**REMARKS**

In the Final Office Action dated May 19, 2004, claims 1-20 are pending. Claims 1, 10, and 17 are independent claims from which all other claims depend therefrom. Notice that the independent claims 1, 10, and 17, as well as claims 2, 5-6, 11, and 15 have been amended. Claim 13 has been canceled.

Referring to MPEP 706.07, Applicant submits that while the rules no longer give an applicant the right to "amend as often as the examiner presents new references or reasons for rejection", present practice does not sanction hasty and ill-considered final rejections. Applicant submits that in submitting the amendments of the March 9, 2004 Response, Applicant was seeking to define his invention to give him the patent protection to which he was justly entitled with respect to the prior art references presented by the Examiner in the First Office Action. MPEP 706.07 states that the Applicant should receive the cooperation of the Examiner to that end and not be prematurely cut off in the prosecution of his application. The Applicant submits that the amendments provided in the First Response were justified to give him the patent protection entitled. This is verified in the current Office Action in which the Examiner has presented a new reference not previously cited or disclosed to overcome the amendments. Applicants also submit that the Applicant has not dallied in the prosecution of his application or resorted to technical or other obvious subterfuges in order to keep the application pending. The determination of the kinetic energy of an object for improving the determination of potential collision severity is not a technical or obvious subterfuge. This was not taught or suggested by the relied upon references in the First Office Action nor would it have been obvious from the stated references to provide such determination. Thus, Applicant, respectfully, submits that the current Office Action should be non-final.

Claims 1-3, 5-7, and 9-16 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Kopischke (USPN 6,359,553) in view of Bates et al. (USPN 6,337,638) and further in view of Brambilla et al. (USPN 6,199,903).

Claim 1 recites a collision severity estimation system for an automotive vehicle. The system of claim 1 includes the limitations of a controller determining a depth of an object in response to an object detection signal. The controller generates a collision severity signal indicative of a potential collision between the automotive vehicle and the object in response to the depth.

Claim 10 recites a method of determining motion properties of an object. The method of claim 10 includes the limitations of classifying the object and estimating the mass of the object in response to the classification.

The system and method of claims 1 and 10 in determining the depth, classification, and mass of the objects allow for improved evaluation of an object including the determination of object volume and kinetic energy for improved potential collision severity estimation. Improved collision severity prediction or estimation provides increased collision countermeasure system performance by allowing collision countermeasures to be better tailored to the particular potential collision situation, which thereby further prevents injury to vehicle occupants.

Kopischke, Bates, and Brambilla fail to teach or suggest the determination of the depth of an object and the estimation of the mass of an object in response to an object classification. Also, none of the stated references teach or suggest the generation of a collision severity signal and the determination of motion properties of an object in response to the determined depth. In addition, none of the stated references teach or suggest the determination of kinetic energy of an object in response to the estimated mass based off an object classification.

The Office Actions rely upon Kopischke for the disclosure of determining the volume of an object, and in so doing, refer to col. 4, lines 7-23 of Kopischke for such disclosure. Applicant submits that in col. 4, lines 7-23 of Kopischke discloses the ascertaining of the shape and distance of an obstacle and the determination of whether an obstacle is a vehicle, a person, or some other object. Nowhere in col. 4, lines 7-23 or anywhere else in Kopischke is the depth of an object determined. The system of Kopischke estimates whether an obstacle is a vehicle, a person, or some other object based on the shape not the depth or the volume.

The Office Actions rely on Brambilla for the teaching of estimating the mass of an object. Applicant submits that Brambilla simply utilizes a typical vehicle mass when performing the stated estimation. Brambilla does not classify the object and in response to that classification estimate object mass.

Thus, Kopischke, Bates, and Brambilla fail to teach or suggest each and every element of claims 1 and 10, therefore claims 1 and 10 are novel, nonobvious, and are in a condition for allowance. Since claims 2-3, 5-7, and 9-16 depend from claims 1 and 10, respectfully, claims 2-3, 5-7, and 9-16 are novel, nonobvious, and are in a condition for allowance for at least the same reasons.

Claims 4, 8, and 17-20 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Kopischke in view of Bates and in further in view of Brambilla and further view of Miller et al. (USPN 6,480,144).

The Applicant submits that since claims 4 and 8 are dependent upon claim 1, that they are novel, nonobvious, and are in a condition for allowance for at least the same reasons as stated above with respect to claim 1.

Claim 17 recites a method of performing a collision countermeasure and includes the limitations of determining velocity, depth, and mass of an object and in response thereto determining potential collision severity and performing a collision countermeasure. As stated above, Kopischke discloses the

determination of the shape and distance of an object not the depth of an object and clearly not the mass of an object. Brambilla determines speed and kinetic energy of an object using a typical estimated vehicle mass not a mass based upon an object classification and clearly not the depth of an object. Bates also fails to determine depth and mass of an object, but rather determines range and velocity of an object.

The Office Action relies on Miller for the teaching of a countermeasure controller in communication with various countermeasure devices and the controller determining collision severity. Although Miller may provide such disclosure, Miller, as with Kopischke, Bates, and Brambilla does not teach or suggest the determination of the depth of an object and the potential collision severity between a host vehicle and an object in response to that depth determination. Miller also does not teach or suggest the determination of the mass of the object based upon an object classification and the determination of the potential collision severity in response to that mass. Thus, claim 17 is also novel, nonobvious, and is in a condition for allowance.

Furthermore, since claims 18-20 depend from claim 17, they are also novel, nonobvious, and are in a condition for allowance for at least the same reasons as put forth above with respect to claim 17.

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In light of the amendments and remarks, the Applicant submits that all rejections are now overcome. The Applicant has added no new matter to the application by these amendments. The application is now in condition for allowance and expeditious notice thereof is earnestly solicited. Should the Examiner have any questions or comments, he is respectfully requested to call the undersigned attorney.

Respectfully submitted,

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